

# W5YI

National Volunteer Examiner Coordinator

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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### ★ In This Issue ★

*Amateur Packet Software Dispute  
Ham Operation by Family Petition  
So. Calif. Repeater Coordination  
Status of Ham Radio in Thailand  
Two Puerto Rican VE's Fined \$750  
AMSAT Phase 3C Ready to Fly!  
Tony England Retires From NASA  
More on Canadian No-Code License  
SKITREK Progress Report  
Amateur Licensing Stats - April 1988  
Reciprocal Operation in Germany  
A Dying Technology Returns to Life  
Consumer Technology Report  
Computer Virus/High Tech Terrorism*

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## AMATEUR PACKET RADIO TECHNOLOGY DISPUTE

*Frustration rages between amateur experimenters who freely contribute to the radio art and amateurs with a profit motive who protect their technological developments from further enhancements with copyrights and patents.*

A major controversy has ignited in packet radio circles over the emergence of a new digipeater switch firmware package known as **TheNet** from the well known German amateur organization **NORD><LINK**. Before TheNet began to appear on packet switches around the country, the principal switching firmware was **NET/ROM**, a commercial product of a company called **Software 2000**. NET/ROM was written by its amateur radio operator owners, **Mike Busch, W6IXU** and **Ron Raikes, WA8DED**, as a commercial profit making venture.

Software 2000 earned much praise for its creation of NET/ROM, which plugs into the TAPR TNC-2 packet controller and compatible units. It enables digipeaters to network together for long-distance packet routing. The company has come under considerable criticism for its pricing and upgrade policies, but this has not prevented large numbers of digipeaters from purchasing and installing NET/ROM.

TheNet, a public-domain package, was designed by German amateur radio programmers to be compatible with NET/ROM and to use a similar interface. NORD><LINK has features not present in NET/ROM, and digipeaters are rapidly converting over to TheNet which is available at no cost.

W6IXU and WA8DED allege that TheNet was essentially a reproduction of their own copyrighted NET/ROM program code. "From the preliminary information, we knew that NORD><LINK had undertaken a major effort to completely disassemble NET/ROM, so we suspected that their offering would borrow heavily from our copyrighted code and algorithms," Mike Busch said. "When we finally got to look at TheNet, however, we were shocked to discover just how much of it was byte-for-byte identical to NET/ROM 1.3 ...with no effort made whatsoever even to disguise the plagerism! [sic] That's when we went public with our statements about the theft of our software." [That quote was from a message Busch posted on CompuServe - and also circulated on various packet nets.]

NORD><LINK programmers **DF2AU** and **DC2OC** totally dispute Software 2000's claims. The German amateurs argue that they used different programming tools and created new code. It was obvious, however, that they were highly annoyed with amateurs precluding further amateur packet radio experimentation via the copyright route.

One Virginia ham examined the code in the two products and concluded that they were not as



## National Volunteer Examiner Coordinator

**June 1, 1988**

The controversy roars on with amateurs lining up on both sides. Many - particularly those with business interests in the amateur radio industry - feel that without the advantages of commercial development, little would be developed or improved. There are just as many who staunchly maintain that

Under the WUET Report Program, if you please, sent copy of your wish to be plunked over. I have per my station (147.250) Class license the following signed statement and a SASE to: operator license revoked or suspended. I do not own a significant



the Amateur Radio Service exists "to contribute to the advancement of the radio art" [§Part 97.1b] "...with a personal aim and without business or pecuniary interest." [§Part 97.3b].

Whether or not the packet software was pirated has yet to be nailed down. The fact remains, however, that NET/ROM is a commercial copyrighted product and there are legal remedies available to Software 2000 to take care of the situation. The scene will probably shift to court.

## FAMILY MEMBER HAM OPERATION DENIED

The FCC has denied a Petition for Rulemaking submitted by **Carroll L. Norton, NA4I**, of Augusta, Georgia. Norton seeks to authorize unlicensed use of amateur stations between members of the same family. He said that this privilege should be limited to families where at least one person holds an Amateur Extra Class operator license.

Norton suggested that stations with non-licensed control operators be designated as "auxiliary units". Family members would use the station call sign of the Extra Class operator appended with the word "auxiliary." The Amateur Extra Class operator would be fully responsible for the proper operation of all auxiliary units. Norton argued that his proposal would enhance Amateur Extra Class privileges and encourage family participation in amateur radio.

The FCC said that the Norton petition raised two major issues concerning the purposes and requirements of the amateur service. First, the Commission determined in 1983 that the amateur service should not be used as an alternative to other radio services. Personal radio communications are already available to family members in the *General Mobile Radio Service* (GMRS) and the *Citizens Band* (CB) *Radio Service*. "The amateur service is for the purpose of self-training, intercommunication and technical investigations carried out by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest," the FCC said in a May 24th press release.

"Second, the Commission does not exempt any amateur station control operator from the licensing requirement. The requirement that only a qualified person can hold an amateur operator license is based upon provisions in the international Radio

Regulations. Amateur station operation by persons who have not demonstrated that they are qualified to operate in the amateur service, therefore, would be inconsistent with our treaty and statutory obligations."

"If exemptions from the licensing requirement were granted, persons who have not demonstrated the requisite qualifications could be control operators of amateur stations. This is significant, as the Commission does not generally apply its type acceptance program to transmitters used at amateur stations. Such transmitters may be designed, constructed, modified and serviced by amateur operators who are qualified to do so by virtue of having passed examinations concerning the privileges of their licenses. Persons who have not demonstrated their technical and operational skills may not be qualified to maintain the proper signal quality for such transmitters. GMRS and CB transmitters must be type accepted by the Commission. The manufacturer must prove that the transmitter meets exacting technical standards related to its usage. Thus, these services are more suitable for the communications proposed by the petitioner."

"The petitioner, in effect, seeks to use the amateur service for a purpose not intended, i.e. as a personal radio service. The amateur service in the United States, however, has fundamental objectives beyond merely engaging in communications. A primary purpose of this service is to help expand our country's reservoir of trained operators, technicians and electronics experts and to encourage their ability to contribute to the advancement of communications technology. Only amateur operators who possess the necessary technical knowledge and operating skills are capable of meeting these objectives. Thus, the purpose of the amateur service is best served by the application to all users of a licensing requirement based on demonstrated abilities."

**[Action by FCC Order, May 13, 1988]**

• On May 24th, the FCC released the wording of the new station identification rules applying to aliens operating amateur radio stations under reciprocal permits. The wording **effective July 18, 1988**, is as follows:

**"§Part 97.313 Station Identification** - When the station is operated under a reciprocal permit, the call sign transmitted in the identification procedure must be that issued to the station by the licensing country, preceded by the appropriate letter-numeral



## National Volunteer Examiner Coordinator

June 1, 1988

- The DXAC is considering the reinstatement of **Okino Torishima 7J** as a DXCC country. The League stretched the DXCC rules to make it a

- ICOM says their new **IC-32AT dual band (2-meter/450 MHz) five watt hand-held** will list for \$629. Featuring crossband operation, you can transmit on one band ...and listen on the other! ICOM also has introduced a new \$315 **EX-627 HF**

**NOVICE AMATEUR RADIO COURSE** - Complete with 2 cassette Morse code (complete text) in order to pass your exam. Includes a Novice amateur radio operator's or to teach an



Tony, who holds a Ph.D from MIT, will become Professor of Electrical Engineering at U of M's EE department. He will conduct research on satellite-based remote sensing - a field in which he is considered a leading world authority. The job of continuing the "Ham in Space" program now falls to **Dr. Ron Parise, WA4SIR** of Silver Spring, Maryland.

• A difference of opinion has developed between **Communications Canada** (the official new name for the DOC, Department of Communications) and Canada's two national amateur organizations, the **Canadian Radio Relay League (CRRL)** and the **Canadian Amateur Radio Federation (CARF.)** In February, CC proposed a four class Restructuring of the Amateur Radio Service. The three lowest levels of amateurs (A, B, and C) would be required to use commercially designed and marketed transmitting equipment but they could build and use any other gear they wanted. There would be no such restriction on top level, Class D amateurs. The ham groups feel that the "commercial gear" only concept runs counter to the basic premise that the Amateur Radio Service is also an experimental service. They feel that all amateurs should be able to build and experiment with all gear of their own making provided it does not cause interference. "Whether an amateur wants to be a communicator or an experimenter should be left to the individual to decide without being forced by **Communications Canada** and the **Radio Regulations**," they jointly say. It appears that CC is not flexible on this aspect. Now comes word that the joint CRRL/CARF working group has developed a compromise solution. They want CC to allow the lowest three level amateur classes to use: (1.) home designed and built transmitters up to 250 watts subject to their being checked out by a level D amateur; (2.) transmitters up to 250 watts built from commercial kits; (3.) home designed and built transmitters up to 10 watts without being checked out and; (4.) commercially made transmitters up to 250 watts.

• **Transpolar SKITREK Progress Report** - The thirteen members of the Amateur Radio supported **Transpolar Skitrek Expedition** have made excellent progress this week as they near the coast of Ellesmere Island, (Canadian) Northwest Territory. On Saturday, May 28 they were just 45 miles from their destination. They plan on coming ashore on Ward Hunt Island about June 1-3, just to the north of Cape Columbia. The moving group will have one more supply and science air drop before the trek ends. All is well with the skiers as they continue

southward and the weather moderates. Temperatures are reported to have risen to a balmy -10 degrees Celsius. The Soviet ice island NP-28, one of the principal communications bases for the expedition, is now experiencing rapid break-up. The past week saw it split into 4 pieces. The crew is now seriously considering abandoning the station as it continues its southward drift. Continued fracturing has shrunk the airstrip to less than half its original length. **Barry Garratt, 4K0DX/VE3CDX**, Canadian communicator on the "island" lost part of his ICOM communications gear on Saturday, May 21st, when the HF linear amplifier fell into the sea as a crack in the ice developed. He is now in the process of returning to Canada via the Soviet Union. Temperatures at Resolute Bay, NWT, Canada, are now often above zero. The last Canadian communicator, Rick Burke, VO1SA, has now arrived at Resolute. Rick spent a month in the Soviet Arctic back in March as the trek began. The Royal Canadian Air Force has joined the Skitrek communications team with their amateur station VE8RCS located on Alert on Ellesmere Island. (Report prepared by Rick Ensign, N8IWJ.)

## APRIL AMATEUR LICENSING STATISTICS

<u>April</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	
New Licenses	2043	2767	2950	2195	
<b>Upgrading:</b>					
Novices	726	1387	765	1218	
Technicians	251	446	201	389	
Generals	273	549	274	317	
Advanced	<u>184</u>	<u>332</u>	<u>185</u>	<u>247</u>	
<b>Total:</b>	<b>1434</b>	<b>2714</b>	<b>1425</b>	<b>2171</b>	
<b>Renewals:</b>					
Novices	Not Avail.	297	561	257	
Total:	Not Avail.	4002	4969	2916	
Purged:(*)	389	1741	2002	939	
<b>Census:</b>					
Indiv. Oper.	412429	418917	422933	435435	
Change/Year	+1654	+6439	+4016	+12402	
<b>By Class:</b>					
<u>Extra</u>	<u>Advan.</u>	<u>Gen.</u>	<u>Tech.</u>	<u>Nov.</u>	<u>Total:</u>
<u>April 1986:</u>					
39405	98237	116947	85022	79306	418917
<u>April 1987:</u>					
41634	97504	114943	86118	82734	422933
<u>April 1988:</u>					
44819	98403	113623	95810	82780	435435
Club/RACES/ & Military:	(1985) 2850	(1986) 2730	(1987) 2446	(1988) 2373	
<b>Total Active</b>	<b>415279</b>	<b>421647</b>	<b>425379</b>	<b>437808</b>	
<b>% Increase</b>		+1.5%	+9%	+2.9%	



**Automatic Antenna Selector** which will select the correct antenna for any ICOM HF transceiver's operating frequency. Your rig is automatically connected to any of seven antennas when an ICOM output reference voltage, specific to each band, is detected by the EX-627.

- The FCC has fined **Jose A. Diaz/KP4JF** and **Ramon Cancel/KP4NW** of Humacao and Las Piedras, Puerto Rico \$750 each for participating in a scheme to intentionally submit amateur radio test session results six months late. (*Violation of §Part 97.129 concerning fraudulent licenses.*) Diaz, who was no longer an authorized volunteer examiner, enlisted the aid of Ramon Cancel to sign the test session reports (but not applications) and submit the session paperwork for amateur radio operator license issuance. The test session was redated to December 13, 1987. The examinations actually were conducted in July. The session paperwork was subsequently put aside and forgotten until applicants began to inquire at the status of their unrecieved licenses. While Ramon Cancel had been re-accredited after the FCC cancelled the testing status of all VE's in Puerto Rico in November of 1987, he was not authorized to conduct test sessions. **[Action by FCC April 26, 1988, by Notice of Apparent Liability for Monetary Forfeiture]**

- **Amateur Radio Equipment News**, a new (typeset two-color) twice-a-month ham newsletter, is edited/published by **Joseph Koppi, NG0F**, of St. Paul, Minnesota. June 1st issue goes to more than 8,700 high profile DXers, Contesters and known buyers/sellers of equipment. Subscription rate is \$10 a year for 24 issues. Formerly the **Blue Bargain Swap Sheets**, AREN focuses only on new and used amateur equipment. In addition to advertising, there are new product reports. Commercial display advertising rates range from \$65 to \$300 a (8½ X 11 in.) page. Commercial classified ads: 50¢ a word, personal classified rate for subscribers: 20¢ word. [245 E Sixth St., Suite 440; St. Paul, MN 55101 Tel. (612) 224-5359]

- Arianspace's successful launch of its V-23 mission carrying the Intelsat 5 F13 satellite into orbit a couple of weeks ago clears the way for the launch the amateur community is most interested in: the V-22 Ariane 4 mission carrying **AMSAT's Phase 3C satellite** into orbit. V-22, originally scheduled for June 8th, has now slipped to June 10th. The delay was caused by the need to further inspect all seven first stage turbines. Unofficial sources indicate if the

turbines need to be replaced it will take a week. That will push the launch date out to Friday, June 17. It will be the first flight for the very large Ariane 4 launcher. The launch windows, previously announced as 11:12-12:03 UTC and 13:25-14:44 UTC are expected to shift somewhat. Joint AMSAT-DL and AMSAT-NA teams have now returned to Kourou (French Guiana/South America) for the countdown to launch. The "Team Three" effort is focused on assuring telemetry from the satellite is nominal. A constant stream of telemetry from Phase 3C will alert monitoring engineers of any problems in the satellite systems. Launch day coverage will have W1AW (ARRL), WA3NAN (Goddard Space Flight Center), W6VIO (Jet Propulsion Laboratories), W0RPK (Iowa) and W5RRR (Johnson Space Flight Center) reporting live on many ham bands about an hour before the launch window. W1AW will be on its regular voice bulletin frequencies. WA3NAN: 3860, 7185, 14295, 21295 kHz and 147.45 MHz. W6VIO: 14282, 21280 and 3840 or 7165 kHz. W0RPK/W5RRR will be on 3840 and/or 7165 kHz. In the days immediately following launch an intense effort will begin to precisely locate the satellite using AMSAT-developed techniques and personnel. **Phil Karn, KA9Q**, and **Bob McGwier, N4HY**, will employ sophisticated ranging techniques and advanced mathematical analysis to define the orbital parameters within a few days of launch. The kick motor will then be fired to adjust **AMSAT OSCAR-13** into the proper orbit. During the first several months of operation, AO-13 will yield nearly the communications coverage of a geosynchronous satellite since it will have its apogee right over the equator. The satellite footprint includes all of the U.S. and Canada east of the Mississippi, all of South America, Africa, Europe and the Middle east! With DX windows like this, AO-13 is bound to become the most popular amateur satellite of all time by far. (*Contributed in part by AMSAT's Vern Riportella/WA2LQQ*)

- Riportella also reports that **Tony England, WOORE**, whose July 1985 shuttle flight brought the "Hams in Space" concept to new heights, has announced his retirement from NASA. He will leave the agency within a few weeks and accept a teaching position at the University of Michigan at Ann Arbor. He cited the stretchout of the shuttle and space station programs and his desire to progress with his own agenda as the basis for his decision to leave the agency. Dr. England, a geophysicist from North Dakota, had taken Amateur Slow Scan TV with him on his flight aboard the shuttle Challenger.



# W5YI REPORT

National Volunteer Examiner Coordinator

Page #7

June 1, 1988

(\* = 'Purged' are amateurs that have been permanently removed from the FCC's Amateur Radio Service **Master File**. The Master File contains all currently licensed amateurs plus those within the five year grace period. There are currently 477,923 amateurs in this file.)

## • FIRST LICENSES TO AMATEUR OPERATORS

MONTH/YR:	84/85	85/86	86/87	87/88
October	961	1356	874	882
November	1281	910	1404	1131
December	1552	2385	1826	2582
January	1343	1477	2248	1189
February	1242	1805	1889	1624
March	2001	1606	795	2733
April	2043	2767	2950	2195
May	2174	958	6797	
June	1186	2028	1850	
July	1478	2808	870	
August	1335	1377	918	
September	908	1504	1917	
<b>TOTALS:</b>	<b>17504</b>	<b>20979</b>	<b>24338</b>	
INCREASE:		+3475	+3359	
% INCREASE:		+19.5%	+16.0%	

## RECIPROCAL OPERATION IN GERMANY

U.S. licensed amateur radio operators living or visiting in West Germany have become the latest target of German governmental bureaucracy. The Branch Chief of the Amateur Radio Division of the FTZ, (*Fernmeldetechnisches Zentralamt*) the technical communications arm of the German government similar to the FCC, recently made an internal policy decision which removes reciprocal licensing privileges which had been in effect for over 7 years for U.S. Novice class licensees.

In order to solve an internal licensing problem, the FTZ chose to attack the FCC by questioning whether they are following or breaking international laws governing knowledge requirements for allowing its radio amateurs use of certain frequency band or operating mode privileges.

On September 11, 1987, a letter was sent to the U.S. Army Amateur Radio License Management Office, Headquarters, 5th Signal Command, from the Deutsche Bundespost FTZ Office stating that from now on U.S. Novice licensees will no longer be eligible to receive a reciprocal Class A license in West Germany.

The FTZ letter stated that "It appears to us that the test conditions and test knowledge level for the U.S. Novice class license and the German Class A licenses are not exactly the same. Because it seems that the U.S. Novice class license knowledge level requirements and band privileges allowed are less than the German Class A license, it is no longer possible for us to allow granting a reciprocal license to holders of a U.S. Novice class license." The FTZ also mentioned that "since 1983, the U.S. Novice class licensees have been administered solely by other U.S. amateur radio operators and not by an official arm of the FCC or U.S. government." The FTZ still allows the U.S. Technician class licensee to receive a German Class A license under the reciprocal licensing agreement in effect between the U.S. and West Germany.

The Wiesbaden Amateur Radio Club - an ARRL affiliated club made up primarily of U.S. armed service personnel - is very concerned that the recent decision made by the German government FTZ office to deny reciprocal German Class A license privileges to U.S. Novice licensees was made for the wrong reasons and that a better solution could have been effected to correct the perceived problem.

Germany allows its citizens to obtain permanent German call signs and amateur licenses upon presentation of a U.S. Amateur Radio license. The FTZ allows this practice even though they have a rigid testing procedure set up for their own citizens in their own language in accordance with their own regulations for anyone wishing to become a licensed radio amateur in Germany.

**Stephen R. Hutchins, KN6G/DA2HS**, president of the Wiesbaden ARC, feels that the FTZ decision was actually made to stop the practice of German citizens going to the U.S. on vacation, receiving a U.S. Novice class license, then returning to Germany and demanding a German Class A license. He feels Germany should stop the practice of allowing its citizens to trade in foreign amateur licenses for permanent German ham tickets rather than denying U.S. Novices reciprocal privileges.

Most countries (including the United States) only issue amateur licenses to its citizens upon successful completion of its licensing requirements. Amateur radio operator licenses of other countries only allow reciprocal operation to aliens ...citizens are not eligible for any of the privileges granted by

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reciprocal licensing agreements.

Hutchins now is carrying his complaint against West Germany's handling of reciprocal licensing to the FCC and the U. S. State Department. He says "Every effort should be made to persuade the German government to reinstate reciprocal licensing privileges to the U.S. Novice licensee again in the interest of fairness and international good will."

- **Expect more satellite teleports** to uplink and distribute data for the public. In 1984 only a half a dozen cities had commercial earth stations that accessed satellites. Now twenty cities have at least one teleport. Researcher Frost & Sullivan says that more than 200 teleports will be in operation within ten years versus 45 today. Teleports evolved when programmers (such as HBO) wanted to distribute their programming to cable operations. Meanwhile, the FCC has proposed rulemaking that would require video satellite uplinks to automatically identify their signals to preclude future abuses - such as the "Captain Midnight" scrambling protest when a ham operator used a Florida teleport to overtake an HBO movie.

- **FAX, a dying technology returns to life.** Has it ever! Fueled by improved product features and dropping prices, 1986, 1987 and 1988 have been boom years for the consumer facsimile industry. CAP International of Marshfield, Mass., a research firm specializing in the electronic-imaging market, estimates that 465,000 fax units were sold in 1987, compared to 200,000 in 1986. CAP projects sales of more than 7000,000 units this year. The problems of past generations are gone ...high cost, slow transmission and incompatibility between models. Get a "Group III" machine that is compatible with "Group II." Forget the old slow "Group I's" ...they are antiques. "Group III's" take 20 seconds to send a page compared to 2 minutes plus for an old "Group I" - a 50¢ saving per page! FAX's cost in the \$1,000 to \$3,000 range. Other features you should have: combination document/voice transmission (phone line costs are greatly reduced after 11:00 p.m.), automatic feeding (essential for automatic transmission of multi page documents); auto-dialing (80% of your transmissions will go to the same firms); low volume copying (newer machines are also photocopiers); ...automatic receipt notification ("hand shaking" routine notifies sender that document actually was received and printed). New-

est wrinkle is a FAX-to-PC option allowing composition, transmission, receipt and storage on microcomputers.

- **Away-from-home/business public access FAX centers** are appearing as well as firms that advertise via facsimile. Expect to find business flyers on your FAX soon as the installed base expands. The average citizen can now walk into a facsimile center to send an overnight letter. *Action-Fax*, a Dallas company, is selling franchises to operate free standing FAX machines. They expect to have 1,500 public facsimile stations in airports and office-building lobbies this summer. Sir Speedy, Inc. of Laguna Hills, California, has its *FastFax Network* operating in its quick printing locations. *Hotelecopy*, Miami, claims the world's largest public-facsimile network with machines in 1,100 hotels. *Mail Boxes, Inc.*, offers fax at 600 franchised stores. *US Fax* markets a nationwide sophisticated facsimile "traffic management" system. Most networks charge about \$4-\$5 for the first page, \$1-\$2 for pages up to about 10 ...and 50¢-\$1.00 thereafter.

- Strangely, high-tech overnight package delivery leader, Federal Express Corporation, embarrassingly failed with its **international ZapMail fax service**. They cancelled the project after a \$66 million write-off last year. One of their major successes, however, has been their **Cosmos Information Network** which tracks packages door-to-door instead of paperwork. Fedex replaced its overburdened radio system with DAD - *Digital Assisted Dispatching*. Each driver now has a hand-held scanner/data entry keypad. These scanners read barcodes on each parcel which is instantaneously fed to the company's computer network. The system also lets Fedex stations know how many packages are headed their way.

- The textile industry is toying with a 36 inch wide "**photocopy**" **printing process** that allows permanent color and designs to be quickly transferred to bolts of fabric. Objective is quicker reaction to fashion trends and customer orders at reduced inventory and far less expense.

- Hayes, the world's largest maker of modems for personal computers, has designed a special 1200 baud modem for the new Sears/IBM joint **videotex "Prodigy"** venture now being test marketed in Hartford, San Francisco and Atlanta. Prodigy's goal is to create a nationwide network of millions of home-based PC users accessing travel

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# W5YI REPORT

National Volunteer Examiner Coordinator

Page #9

June 1, 1988

information, banking, stock brokerage, and various other product and information services. Users can even shop for groceries with payment by credit card. (Items are displayed on the screen aisle-by-aisle. *Prodigy* even remembers the brands the user prefers and when they last bought it ...sort of a built in shopping list!) Subscribers pay a flat \$9.95 a month for unlimited service. *Prodigy* comes with a package deal which includes software, six months access time, the Hayes PM-1200 modem and all PC cables and connectors for \$149.95. Every previous videotex venture has flopped miserably but Sears/IBM may have a shot at success. They are expert marketers and *have very deep pockets*. The \$450 million venture is aimed at families earning more than \$40,000 a year with little time to shop or phone. TV advertising focusing on ease of use and low monthly cost breaks in June. Of the 20 million PC's in homes, only 5 million are powerful enough to operate *Prodigy's* sophisticated software. IBM is naturally hoping that more people will now have a reason to buy a home computer. Sears/IBM will expand *Prodigy* to 20 markets next year.

- **Newest technology for the oldest profession!** A multimillion dollar prostitution ring was broken up when a computer operator and his wife were arrested in Long Island, New York, last month. Dominick Volpe used a Wang computer to carefully match client wishes with "entertainers" who were summoned by beepers.

- **The high-tech grocery store.** **Telepanel, Inc.** is testing a new shelf-mounted electronic LCD-display pricing system. Price tags are changed by a central computer. **POP (Point-of-purchase) Radio** will offer customized in-store music programming and advertisements. **VideOcart** is a grocery store pushcart with a flat TV screen on its handle. The sequence of promotional video messages is determined by the cart's route throughout the store. **VideOcart** also collects marketing data for the store ...such as how much time is spent in each product category. Satellite received video ads will be relayed to the carts from low-power FM transmitters installed in the store. 10,000 U.S. supermarkets supposedly will have them within two years.

- **Other goofy gadgets!** **PhonyPhone** is a car phone that isn't. For \$15.95 you can get a fake cellular telephone and bogus antenna to improve your image. Sony has a **Telephone Keyboard** answering machine that offers prerecorded fight-back messages such as "What the \_\_\_\_ do you

want." Sanyo's **Selectaphone** requires callers to enter a secret code before they are allowed to ring through. **CorTemp** is an edible capsule thermometer that constantly transmits body temperature to a PC. Heart rate version in development. The **Club Theatre Network** has keypad equipped seats so you can talk back to a satellite delivered video presentation such as an auction. A scanner lets you buy things via credit card from your movie seat! **Liteset** is a walkman-type wearable telephone. Toshiba's **Sonic Jacket** is equipped with 4 speakers and an amplifier. Wearers slip their portable FM radio or stereo into a pocket and connect their jacket sound system to the headphone jack. **AccuTape** is an ultra-sonic tape measure you point at an object to be measured. Accurate to one tenth of an inch.

## COMPUTER VIRUS'- High Tech PC Terrorism

Like the major earthquake predicted by *Nos-tradamus* for May 8th, 1988, the "**Black Friday Computer Virus**" failed to make its appearance in the United States on Friday the 13th. More than a thousand computers in Israel had been infected with the virus that contained a code time bomb intended to destroy all files in storage on Friday May 13, 1988 - the 40th anniversary of the last day of Palestine's existence. Israel declared independence on May 14, 1948. The virus was discovered by a student late last year at *Hebrew University* in Jerusalem, Israel, when a friend's PC acted up. An immunity vaccine program was widely distributed in Israel but the virus later reappeared in the United States.

**Computer virus** is the latest buzzword for uncontrolled self-replicating software designed to disable computer data systems through overload, destroying files, erasing/formatting disks or code modification. It started as a prank but it definitely isn't funny anymore now that its deadliness has become apparent. The existence of the virus problem had until now been kept reasonably quiet fearing that further publicity might inspire hundreds of hackers who get their kicks by causing pain to others.

The virus problem probably started when a West German student entered IBM's communication network and wrote software that copied itself at least a half a million times. When any of IBM's 250,000 users read their mail, the "virus" simply drew a harmless Christmas tree on the screen.

Now newer, more powerful "time bomb" parasitic viruses have been developed that attach

W5YI-VFC: P.O. Box #565101: Dallas, Texas 75356-5101. A certification of interest in nor am an employee or any company or entity engaged in preparation materials. My age is at least 18 years old.



itself to other software and replicate, destroy or revise data and metamorphose into more viruses at different times. The virus code quietly searches existing object code or data files. If it does not find a copy of itself, it will add one to the uninfected file, usually at the beginning or end. Authors of a few reported virus programs have been publicly identified, but many have not.

NASA was infected with the **Scores virus** which randomly spread through other programs stored on that computer's disks causing widespread system crashes. The **Scores virus** quickly spread over NASA's Macintosh local-area networks throughout the United States and eventually to Apple itself and EDS, the Dallas General Motors owned *Electronic Data Systems*. Apple has been monitoring and tracking the virus but the source of infection has yet to be identified. The FBI is now involved. A virus was inadvertently distributed in brand-new Apple software sold at retail this Spring. Major software houses - including Microsoft, Lotus, and Ashton-Tate - refuse to comment on whether they have discovered viruses in their software.

Last November an identified computer hacker created the **Zero virus** that attached itself to MS-DOS operating systems. It wrote 50 zeros to the first fifty sectors of any disk destroying the disks boot capability, file allocation table and directory once the program was accessed a specified number of times.

The **Freehand virus** replicated itself into all uninfected software and after reading an internal Macintosh clock, printed a congratulatory message to Macintosh screens on March 2, 1988 - the first anniversary of Apple's introduction of the Macintosh II. The program then destroyed itself and disappeared.

Another virus code contained the names, addresses and phone numbers of two brothers that ran a computer store in Pakistan. They said they wrote the **Brain virus** program in 1986 for "fun" but U.S. programming experts believe it was created with malicious intent. The original version was harmless - but was easily altered to make it destructive. The brothers, *Basit and Amjad Alvi*, said they had no idea how it reached the United States.

A modified version of the **Brain virus** reached the Providence, RI, *Journal-Bulletin* newspaper on May 6th when a message popped up on

their computer screens reading, "Welcome to the Dungeon. Beware of this Virus. Contact us for vaccination." The 1986 copyright date and address of the *Brain Computer Company* (730 Nizam Block Allama Iqbal, Lahore, Pakistan) and three phone numbers then appeared. The program infected the *Journal-Bulletin's* in-house word-processing network ...destroying one reporter's data and infecting dozens of floppy disks before it could be eradicated. The same virus has wiped out student disks and term papers at *Bowie State College* in Maryland and *Miami University* in Ohio.

The EPA (Environmental Protection Agency) recently had a run in with a virus and had to have its hardware vaccinated with **Virus Rx** - a free program issued by Apple Computer, Inc.

The **Trojan Horse** while not really a virus in that it doesn't add code to existing programs ...is even deadlier. It is distributed on a disk that purports to be a popular arcade game. It simply asks for the number of players and then goes about *erasing and formatting all disks* on the system while the owner helplessly watches in horror!

Few U.S. laws address software vandalism. Current knowledge cannot "virusproof" a program, machine or network. Harmless viruses intentionally launched experimentally against large mainframe networks have gone undetected. As a class, computer viruses can be written to do virtually anything from destroying hard disks to slightly altering program parameters.

The April issue of **Computers and Security** reports on nine major viruses and a number of antiviral vaccine software products available to combat them. The situation could get worse before it gets better. Their use as a means of industrial or government sabotage is by far the most feared.

Experts say that users must view any and all unknown software as a potential threat. They advise users to back up data files, know the source of their programs and write-protect master disks. In particular, experts advise users to avoid shareware - programs that are freely distributed, often by user groups or online bulletin boards. Anyone that plugs an unknown program into their computer is just asking for trouble.

[Adapted from articles in *BBS Press Service, Inc.*, *IEEE's The Institute, Computer's and Security*, *CompuServe's Online Today* ...among other sources.]